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CZEKAJ, DAVID J	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/836,096
Filing Date: April 17, 2001
Appellant(s): GATEPIN, PHILIPPE

Larry Liberchuk
Reg. No. 40,352
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/24/06 appealing from the Office action mailed 6/14/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,963,608	Wu	11-2005
6,167,084	Wang et al.	12-2000

6,310,915 Wells et al. 10-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (6167084), (hereinafter referred to as "Wang") in view of Wu (6963608).

Regarding claims 2 and 4, Wang discloses an apparatus that allocates bits in a statistical multiplexing system. This apparatus comprises "a regulation process that uses quantization scales and the input signal to determine the complexity" (Wang: figure 4, wherein the regulation process is performed by the encoder and decoder), "computing a weighting factor of compressed data quality, the weighting factor being computed for a current picture as an average over a set of preceding pictures, of an average quantization scale and a number of bits" (Wang: figure 6, column 11-column 12, wherein the weighting factor is the complexity measure shown in equations 5 and 7-8, the compressed input signal is the compressed program), and "allocating the output bit rate to the transcoding channel from a total output bit rate, indicator, and a sum of the indicators" (Wang: figure 6, column 8, lines 54-67- column 9, lines 1-25, wherein the output bit rate is the target number of bits, the sum of the indicators is the complexities of each frame) and the indicator is computed from an average of a function of average quantization scale and a number of bits used to encode the picture" (Wang: columns 11-12, wherein the average quantization scale is $Q_{l,n,t}$, the number of bits used for the picture is $R_{l,n,t}$). However, Wang fails to disclose the indicator as

claimed. Wu teaches that prior art computing systems fail to provide a robust solution to the problem of regulating the rate of data production (Wu: column 1, lines 43-46). To help alleviate this problem, Wu discloses "determining an indicator as a function of the channel complexity and weighting factor" (Wu: column 13, lines 31-40, wherein the indicator is the output of the MCC rate control). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Wang and add the indicator taught by Wu in order to obtain an apparatus that provides a robust solution to the control of data flow in a computing system.

Regarding claims 3 and 7, Wang discloses "the average a weighted average of a set of averages calculated over the pictures" (Wang: columns 11-12, wherein the averages is the quantization scale, the weight is the weighting factor K).

Regarding claims 5 and 6, note the examiners rejection for claim 1, and in addition Wang in view of Wu disclose "a set of transcoders for converting input compressed data at an input bit rate into output signals encoded at an output bit rate" (Wang: figures 3 and 6, wherein the transcoders convert the input bit rate into an output bit rate), "allocating the output bit rate to the transcoding channel from a total output bit rate, indicator, and a sum of the indicators" (Wang: figure 6, column 8, lines 54-67- column 9, lines 1-25, wherein the output bit rate is the target number of bits; Wu: column 13, lines 31-40, wherein the indicator is the output of the MCC rate control), and a "multiplexer for providing a multiplexed

signal at the output bit rate by multiplexing the output signals" (Wang: figure 6, item 660).

(10) Response to Argument

i. On page 6, appellant argues that neither Wang nor Wu teach using the input compressed data signal to determine a video encoding complexity.

Wang illustrates in figure 6 receiving a pre-compressed input data signal into a transcoding system. This input signal is fed into the transcoder and then from the transcoder to the rate control processor (610). It is in the rate control processor that the complexity is calculated (605). Wang further discloses this process in column 8, line 37 – column 9, line 8. The pre-compressed input is retrieved from memory and then used to determine the complexity. The examiner notes that claim language does not recite directly/immediately using the input signal to calculate complexity. Therefore, Wang shows using the input signal, after one processing step, to calculate the complexity.

ii. On page 7, appellant argues that neither Wang nor Wu teach computing a weighting factor of a current picture based on the characteristics of preceding pictures.

Wang discloses in column 13, lines 40-45, that complexity measures can be estimated or calculated based upon the quantization parameter used for a previous frame and the number of bits generated for the frame, indicating the complexity is calculated on a frame-by-frame basis. Wang further discloses in column 11, line 60 – column 12, line 13, using a constant weighting factor, depending on the picture type, to calculate a quantization parameter. However, since this weighting factor is constant it cannot be based on the characteristics of preceding pictures. Therefore Wang

discloses in column 12 equation 9 computing a weighting factor comprised of the complexity ($C_{l,n,t}$), which was shown above to be based on a previous frame/picture multiplied by the weighting factor ($1/w_l K_{l,n,t}$) to generate a new weighting factor.

iii. On pages 7-8, appellant argues that neither Wang nor Wu teach using the complexity and weighting factor to determine an indicator.

Wu discloses in column 13, lines 31-37, distributing the available bits to the frames in proportion to the complexity estimates adjusted by a set of constant weighting factors. Therefore as shown in column 13, lines 44-45, Wu calculates an indicator, the indicator being the FrameTargetBits, as a function of the complexity and a weighting factor. Wang also discloses calculating an indicator, the indicator being the target number of bits T_n, as a function of the complexity and weighting factor as shown in equation 9 in column 12.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

(12) Evidence Appendix

No evidence has been submitted that is relied upon by the appellant.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Dave Czekaj

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